Prospectus of . . . Cactus Estates Ltd.

Destruction of Prickly Pear by Means of Arsenical Poison.

Summary of Appendices I and 2 to Interim Report of Board of Advice on Prickly Pear Destruction.

Scattered plants of prickly-pear are best destroyed by *injecting* the poison. This may be done by means of any of the powder or liquid injectors, or by making a longitudinal incision in the second or third "leaf" of the plant and placing therein either about a teaspoonful of the dry powder (*a*), or a wineglassful of the concentrated solution of the poison (*b*).

With small plants one injection is generally sufficient, but with larger plants two or more "leaves" may have to be treated.

Large clumps of pear consisting of many plants, and denser pear generally, may be more economically destroyed by first lightly *spraying* with the diluted spraying solution (*c*), then mutilating or slashing the pear with bill-hooks, spudbars, or any suitable mechanical contrivance, and then again spraying.

In any case it is advisable to burn off the poisoned pear as soon as it has become dry enough to burn readily, as this operation destroys most of the young growth of seedlings, &c., which is usually found under the clumps, and which is often not destroyed by the poison.

The mixtures are prepared as follows:—

(*a*) Dry Powder for Injection.

Take—

Fifteen (15) pounds of common salt,
Ten (10) pounds of arsenic,
Four (4) pounds of caustic soda.

and mix these ingredients thoroughly. All the ingredients should be in powder. The mixture must be kept in air-tight tins or packages, otherwise it absorbs moisture from the air, and is inclined to set into a hard lump.

(*b*) Concentrated Solution for Injection.

The mixture of the dry powder (*a*) consisting of 15 lb. of common salt, 10 lb. of arsenic, and 4 lb. of caustic soda, is placed in a suitable vessel, and to it is added slowly and carefully, with constant stirring, cold water until the total volume is eight (8) gallons.

Should it be found that all the arsenic has not dissolved (which is shown by the fact that it appears as a sediment on the bottom of the vessel), it will be necessary to boil the mixture for a few minutes.

Certain brands of arsenic are more readily soluble than others, and we found "Red Rose" arsenic to be the most readily soluble of many tested.

(*c*) Diluted Solution for Spraying.

To eight (8) gallons of the concentrate (*b*) add cold water until the total volume of the solution is one hundred (100) gallons.

This strength of solution is the weakest which can be used economically for spraying, and at certain seasons it may be necessary to use the spraying solution somewhat stronger.

The addition of saltpetre, copper sulphate, or other compounds to the spraying liquid cannot be recommended. They are either useless or worse than useless.

On account of the highly poisonous nature of all arsenical compounds, great care must be taken in the preparation of the solutions, and, particularly, the vapours of the boiling solutions and the spray-laden atmosphere (when spraying) should never be inhaled. To prevent possible absorption of the poison through the skin, it is advisable always to rub vaseline or other grease on the hands and arms before commencing operations. There is, however, little danger if reasonable care is exercised.

Cattle must be kept off country on which pear is being poisoned either by spraying or by injection. The grass will generally grow again after a few weeks in favourable seasons, and cattle may then be allowed to graze with safety on the treated area.

J. C. BRÜNNICH,
Chemist to the Department of Agriculture and Stock.

Brisbane, 9th June, 1915.

A. J. Cumming, Govt. Printer, Brisbane.

Prospectus

. . OF . .

Cactus Estates Limited

INCORPORATED UNDER THE COMPANIES' ACT, 1910
(VICTORIA)

A.D. 1913

COMPANIES ACT 1910.

No. 2292. Section 24

[COPY]

Certificate of Incorporation

THIS IS TO CERTIFY that "Cactus Estates Limited" is this day incorporated under the Companies Act, 1910, and that the Company is limited.

Given under my hand at Melbourne this twenty-seventh day of November, 1913.

(Signed) T. P. SLATTERY,
Deputy Registrar General.

Fee
5/-
Received
17th Nov. 1913
Henry F. Metzner
Collector of Imposts
Stamps Acts.

Cactus Estates Limited

Provisional Directors:

OTWAY ROTHWELL FALKINER, "Boonoke," via Deniliquin, Pastoralist.
HENRY JOSEPH WHITING, 101 William Street, Melbourne, Solicitor.
JOSEPH MARK DESCHAMPS, 360 Collins Street, Melbourne, Manager.
JOHN HENRY TAIT, The Auditorium, Collins Street, Melbourne, Manager.
JOHN RICHARD RIPPIN, 375 Collins Street, Melbourne, Investor.
OLIVER CROMWELL ROBERTS, Dulacca, Queensland, Industrial Chemist.

Queensland Director:

(One Director to be appointed after Allotment.)

Managing Director:

OLIVER CROMWELL ROBERTS, Dulacca, Queensland.

Bankers:

UNION BANK OF AUSTRALIA—Melbourne and Brisbane

Solicitors:

MESSRS. WHITING & AITKEN, 101 William St., Melbourne.
MESSRS. FEEZ, RUTHNING & BAYNES, Adelaide Street, Brisbane.

Secretary:

GEO. E. DICKENSON, 60 Queen Street, Melbourne.

Registered Office:

60 QUEEN STREET, MELBOURNE.

Auditor:

SAMUEL JAMES WARNOCK, F.C.P.A., 375 Collins Street, Melbourne.

Brokers:

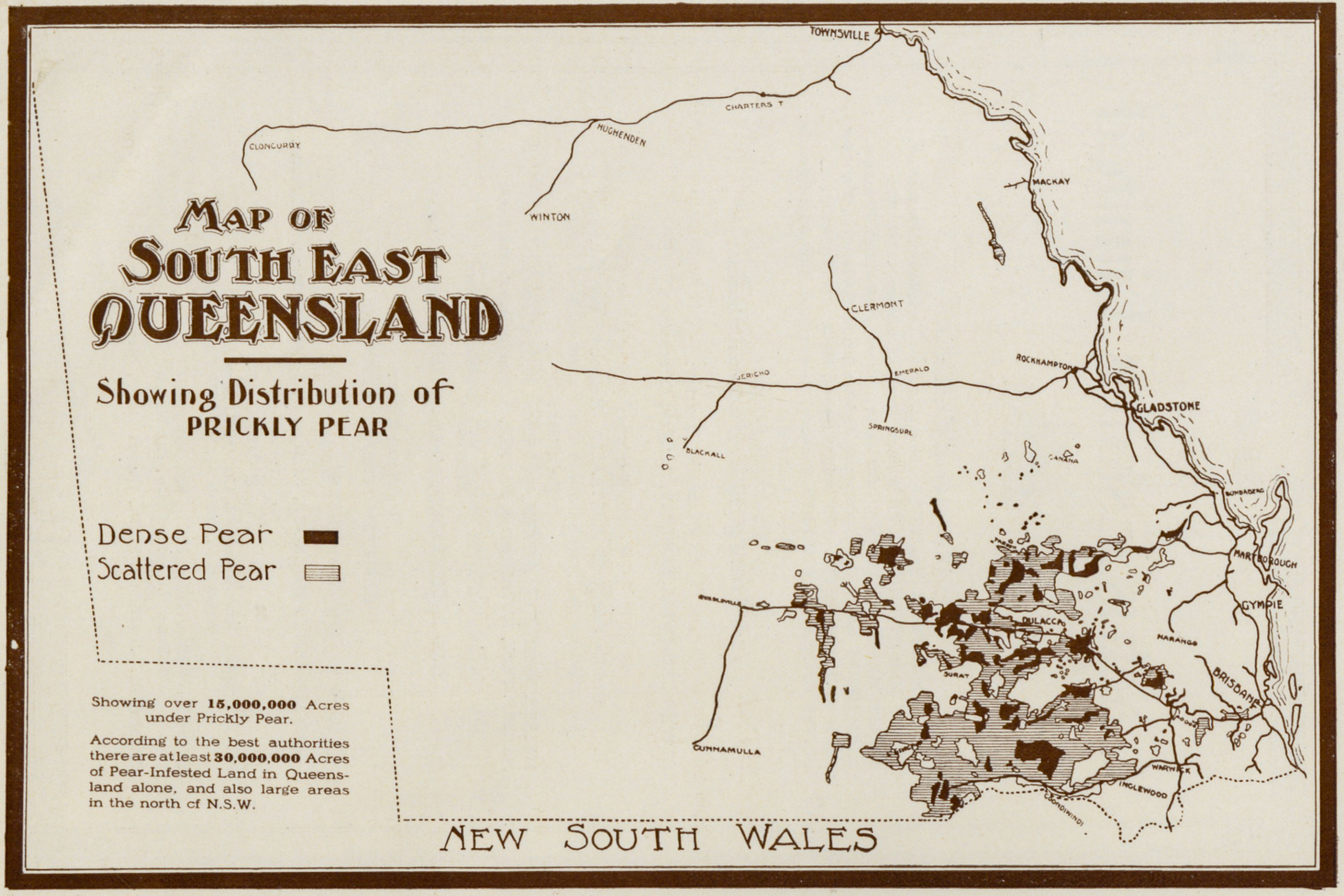
MELBOURNE: John Coodall & Co., 99 Queen Street.
Wallace H. Smith & Co., 377 Collins Street.

SYDNEY: William Tilley & Co., Pitt Street.
Wallace H. Smith & Co, Pitt Street.

BRISBANE: Charlton & Elliott, Queen Street, Brisbane

Map of South East Queensland

Showing Distribution of PRICKLY PEAR



Dense Pear
Scattered Pear

Showing over **15,000,000** Acres under Prickly Pear.

According to the best authorities there are at least **30,000,000** Acres of Pear-Infested Land in Queensland alone, and also large areas in the north of N.S.W.

A Copy of this Prospectus has been Filed with the Registrar-General as required by Section 87 of the Companies Act, 1910 (Victoria)

Dated this Fourth day of December, 1913.

PROSPECTUS

. . OF . .

Cactus Estates Limited

(Incorporated under the Companies' Act, 1910) (Victoria)

CAPITAL: £300,000, in 300,000 Shares of £1 each.

67,500 Shares are now offered to the Public for Subscription payable as follows:—**2/6** per Share on Application, **2/6** per Share on Allotment—

The balance in Calls as required, but **no Call to exceed 5/- per Share,** and **not more than one such Call to be made in any one financial year;** the **First** of such Calls **not to be made within three months of Allotment.**

135,000 Shares, fully Paid Up to £1 each, to be allotted and issued to the Vendor Company.

15,000 Shares, fully Paid Up to £1 each, to be allotted and issued to the Underwriters.

82,500 Shares in Reserve.

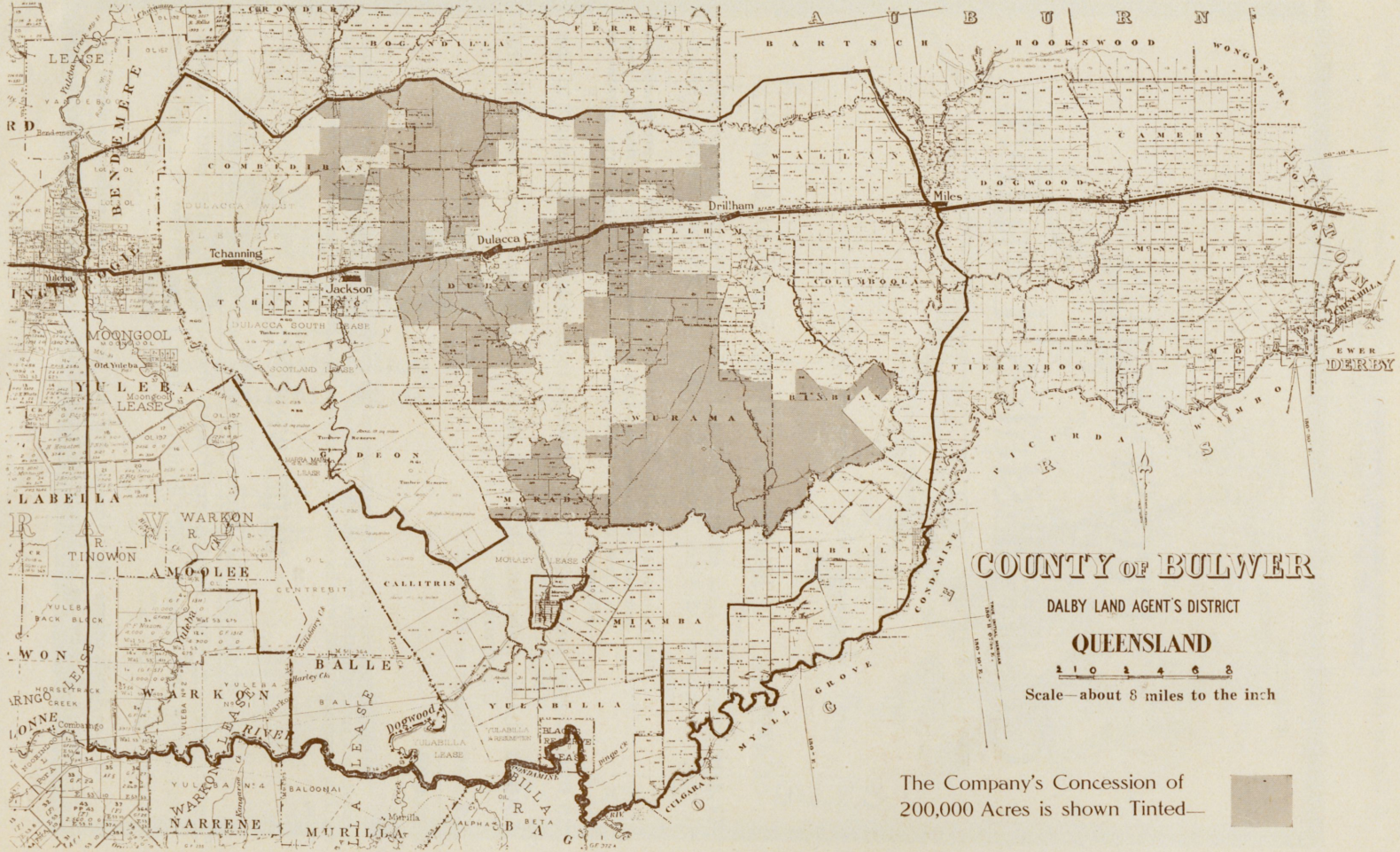
300,000

Holders of Shares or interests in Shares in the Australian Potash Company Proprietary Limited, whose applications for Shares are received by the Company's Brokers on or prior to the 8th December, 1913, will be entitled to priority on allotment in respect of such applications.

UNDERWRITING.

The whole of the present issue has been underwritten by Shareholders in the Australian Potash Propty. Ltd., the underwriters receiving 15,000 Shares, fully Paid Up to £1 per Share, but no other consideration.

N.B.—Applications for Shares will not be recognised unless received by the Company's Brokers on or before 16th December, 1913, at 5 p.m.


COUNTY OF BULWER
DALBY LAND AGENT'S DISTRICT
QUEENSLAND
2 1 0 2 4 6 8
Scale—about 8 miles to the inch
The Company's Concession of
200,000 Acres is shown Tinted—
Miles
Drillham
Dulacca
Tchanning
Jackson
Dogwood
DERBY
YULEBA
MOONGOOL
TINOWON
AMOOLEE
WARKON
BALLE
NARRENE
MURILLA
YUEARILLA
MIAMBA
CALLITRIS
CONDAMINE
MYALL GROVE
WARRONG BRANCH
WARRONG RIVER

Cactus Estates Limited

THE Company is being formed (*inter alia*) to acquire from the Australian Potash Company Proprietary Limited, 60 Queen Street, Melbourne, as Vendor, all the Right, Title and Interest possessed by it in the invention of Mr. O. C. Roberts for the extermination of Prickly Pear, together with all their Assets and Liabilities, potential and actual.

The said Assets include:

1. **Letters Patent No. 5433**, dated 24th day of June, 1912, granting to Oliver Cromwell Roberts (or his agents or licensees) the sole privilege to make, use, exercise and vend, within the Commonwealth of Australia, an Invention for "Means for destroying Prickly Pear"—during the term of fourteen years from the date thereof.

2. **Provisional Application**, dated 21st day of June, 1913, for **Patent No. 9516**—"Means for destroying scattered Prickly Pear."

3. **A Concession,** subject to certain conditions, of 100,000 acres of Crown Lands situated in the County of Bulwer, in the State of Queensland, secured under Agreement, dated the 16th day of May, 1913, between the Honourable James Tolmie, Secretary for Public Lands, and Oliver Cromwell Roberts—the said Agreement being made under and in pursuance of "The Prickly Pear Destruction Act" of 1912.

4. **A further Concession,** subject to certain conditions, of 100,000 acres of Crown Lands adjoining those secured under the above-mentioned Agreement, and guaranteed under a letter dated 19th day of June, 1913, from the Under-Secretary for Public Lands to the Company's Solicitor in Brisbane. The said land being granted under and in pursuance of "The Prickly Pear Destruction Act" of 1912.

5. **A Concession** from the Queensland Government granting the carriage of chemicals from Brisbane to Dulacca freight free.

6. **Chemicals, Machinery, Plant,** etc., etc.

In full consideration for the transfer to the Company of these Assets the Vendor Company receives 135,000 Shares fully paid up to £1 each share, and an undertaking by the Company to pay, satisfy, discharge and fulfil all the debts, liabilities, contracts, or engagements of the Vendor Company otherwise than to its Shareholders for capital subscribed, and to indemnify it against all proceedings, claims and demands in respect thereof.

An Agreement under seal between the Vendor Company and Norman Picot, as trustee for and on behalf of the Company, dated the Twenty-fifth day of

Dense Pear

November, 1913, in respect of the foregoing, has been entered into, copies of which agreement may be inspected at the Offices of the Company's Solicitors, in Melbourne and Brisbane during the usual business hours.

Patents.—Great care has been exercised in the preparation and execution of the Company's Patent covering Mr. Roberts's invention. The documents have been submitted to the highest authorities in the Commonwealth, who have expressed the opinion that it is both a valid and valuable Patent.

Management.—The Company has been fortunate in securing the services of Mr. Oliver Cromwell Roberts, Inventor of the process, for a period of three years from the date of the inception of the Company. Mr. Roberts will act as Managing Director of the Company.

A form of application for shares is printed on one of the subsequent pages of this Prospectus, and applications for shares will proceed only on forms obtained from a printed copy of this Prospectus.

Dense Pear growing up to 8 ft. in height

Prickly Pear in Australia

Since the year 1787, when Governor Phillip is reported to have first introduced it into New South Wales from Brazil, the Prickly Pear has flourished to such an extent that it was speedily regarded as a pest. At the time when Queensland became a self-governing State, the Prickly Pear already infested large areas; but, in spite of public opinion, no definite action was taken to combat the evil until a few years ago. Despite an outlay of hundreds of thousands of pounds spent in the endeavour to check the spreading of the pear and the application of many inventions to the same

end, there were, according to the Under Secretary for Public Lands, over 15,000,000 acres of pear infested land in the State of Queensland at the end of last year. More recently, a pamphlet issued by Mr. A. Temple Clerk, who has spent many years in studying the Prickly Pear and the means for its destruction, states that over 30,000,000 acres are more or less infested with this pest.

Though there is a great disparity between these estimates, the fact remains that to-day vast tracts of valuable agricultural and pastoral land are rendered use-

First effects of the Gas treatment in Dense Pear

less by Prickly Pear; and as this pest is estimated to spread at the rate of about 1,000,000 acres per annum, the situation is causing the gravest concern, both to the authorities and to the general public. It has long been recognised that the man who discovers the means of ridding the country of Prickly Pear at a reasonable cost will not only be regarded as a public benefactor, but will also make a fortune for himself. Mr. Oliver Cromwell Roberts, an American Industrial Chemist, has succeeded where so many others have failed. His efforts have won him the sympathy and support of the Government, the Public, and the Press in Queensland.

History of Mr. Roberts's Invention

In October, 1912, Mr. Roberts came to Melbourne with the object of forming a Company to enable him to carry on certain experiments which he had initiated in Queensland, regarding the destruction of the Prickly Pear in that State. For some years previously Mr. Roberts had studied the Prickly Pear question in California.

The existing methods invariably meant an expenditure of several pounds

First Machine used for the manufacture of Gas

Treating the Prickly Pear with Arsenious Chloride Gas

AS 2 CL 3

sterling per acre—a heavy tax, and in most cases a prohibitive cost. Mr. Roberts's experiments were on distinctly new lines, and promised, if successful, to almost eliminate the heavy labour cost, and also make it a remarkably cheap and effective method of clearing the land.

The Company was duly formed, and in December last, Mr. Roberts, equipped with an outfit, commenced his experiments at Dulacca—situated on the Western line, about 260 miles from Brisbane.

Mr. Roberts, having some months previously experimented with numerous gases, finally came to the conclusion that Arsenious Chloride was most suitable for his purpose. He then, having fully protected his methods, demonstrated the merit of his invention over an estimated area of about 1,000 acres.

Some months were occupied in perfecting the machines used for throwing off the gas, and also in ascertaining the quantity of gas required per acre. In order to fully appreciate Mr. Roberts's wonderful discovery it must be understood that the

Scattered Prickly Pear. The clump in the foreground shows the effects (after 2 weeks) of the Arsenious Chloride applied with the Atomizer only

Untreated Pear in Background

Prickly Pear, unlike most vegetation, derives most of its sustenance from the atmosphere, and not from the soil in which it grows. The leaves of the pear, shaped like a water bag, are covered with numerous stomata or breathing pores, through which the pear absorbs its nutriment from the surrounding atmosphere.

Mr. Roberts's invention briefly consists of the application of Arsenious Chloride to the pear. The Arsenious Chloride is volatilised in a boiler until a sufficient pressure is obtained, when the gas is thrown off into the air, and carried away by the wind until it eventually condenses upon the pear. As Arsenious Chloride is heavier than

A portion of the area cleared by Mr. Roberts.

An interesting feature of the experiments was that the gas, although intended to cover a block of 233 acres, effectively poisoned about 1,000 acres.

Mr. Roberts found that the process described above was particularly suited for dealing with the areas of dense pear. He found that the scattered pear could be treated effectively and economically by the use of a small hand atomizer, which can be carried by a man on foot or horseback. In this way scattered clumps of pear can be effectively got rid of without the use of any special apparatus, and Patents have been applied for, covering this method of dealing with the scattered pear.

effective when applied at that time of the year.

Dulacca Land Cleared of Prickly Pear

Arsenious Chloride is not injurious either to stock or vegetation other than Prickly Pear, as has been clearly demonstrated over a period of twelve months. The appended extracts from the Press indicate that the Prickly Pear problem has been solved by Mr. Roberts.

Financial

Now that the experimental stages of the process are past, works for the manufacture of chemicals will be erected at the earliest possible moment, and the

plant added to from time to time as the demand for chemicals increases. It is estimated that the plant will be constructed by about March next, and certain suitable sites are now under consideration.

To this end the present issue of shares is being made, and it is estimated that the capital derived therefrom will prove sufficient for this purpose.

Dulacca Land Cleared of Prickly Pear

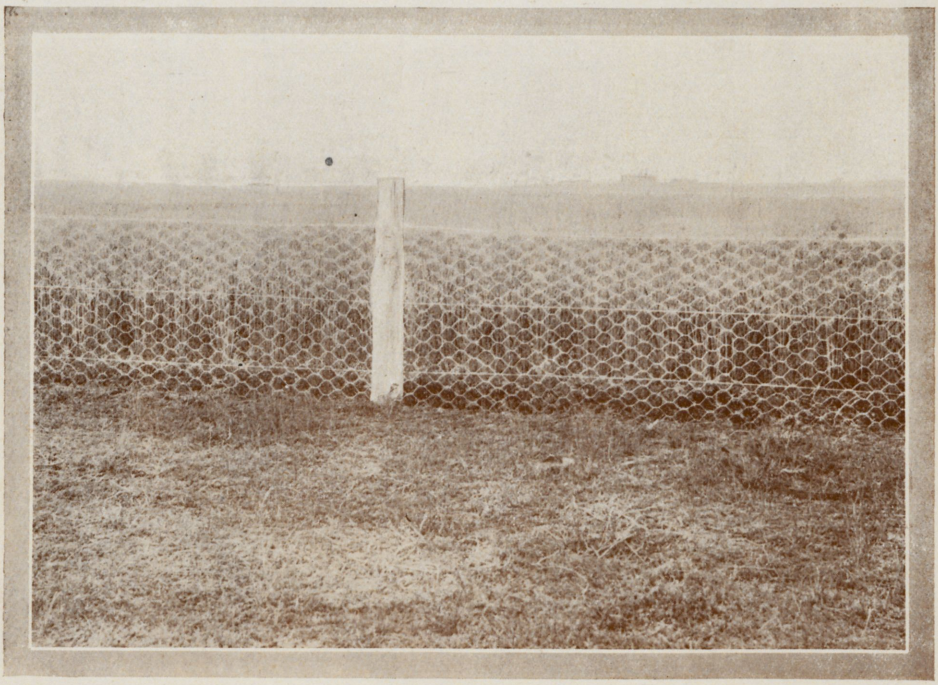
Revenue

The Company will have three principal sources of revenue:—

1. The sale of chemicals.
2. The sale of apparatus for throwing off gas.
3. The sale or lease of the 200,000 acres of land hereinbefore referred to.

Chemicals

It is estimated that the Company will be able to sell Arsenious Chloride to the public at a price which will enable the user to clear an acre of pear-infested land at a cost of under 15/- (labour included), which at the same time will return the Company a handsome profit. Mr. Roberts has already received letters asking for sufficient Arsenious Chloride to treat over 100,000 acres; and when the magnitude of the pear-infested lands is taken into consideration, it will be apparent that there will be an ever-increasing demand for the Company's products.



Wheat Crop raised on land reclaimed from Prickly Pear adjoining the Company's concession at Dulacca

Apparatus

The apparatus necessary for distributing the gas is very simple to construct and operate, but as it is of a special type the machines will be made and sold by the Company under license to the users.

Land

The 200,000 acres before referred to, can, it is computed by Mr. Roberts, be cleared of Pear very cheaply:—at a cost below 15/- an acre. It is only necessary to mention that the Company's concession is at Dulacca, 257 miles from Brisbane, in the North-west portion of the Darling Downs, North of the Condamine River, and South of the Dividing Range, the Western Railway Line runs through it, and the average rainfall is 28 inches, to show that in this land the Company possesses a most valuable asset.

A Dulacca Homestead in the Prickly Pear Country adjoining the Company's concession

Dulacca being in the agricultural belt, the land is suitable for cutting up into small holdings.

In addition to the foregoing it is confidently anticipated that a considerable revenue will be derived from the extraction of Potash from the ashes of the burnt Pear. Experimental Plant for leaching, etc., has been erected, and operations in this connection are now in progress.

Report by Mr. O. C. Roberts

DULACCA, Queensland.
November 5th, 1913.

The Chairman and Directors,
Australian Potash Co. Pty. Ltd.,
60 Queen Street, Melbourne.

Gentlemen,—

I hereby beg to give you a summary of my reports from time to time during the past twelve months on the operations in connection with the demonstration of my process for eradicating Prickly Pear.

We commenced operations at Dulacca towards the end of October, 1912, and in the first part of November we gathered together the necessary plant, materials and chemicals, and made the necessary arrangements for labour. We also secured an area of 233 acres of dense pear land to commence operations on.

About the first December we started running out gas; we tried the machine first under pressure, using hydrochloric acid and arsenious oxide, but found that the machine leaked badly, making it necessary to remove the dome and to work with the open pot, which caused some delay. It was about the middle of December before we succeeded in running out any quantity of gas, and from then on to the middle of January we gave the pear a moderate application.

The open pot method, using sulphuric acid and arsenious oxide, is the cheapest, but it has several disadvantages.

We waited until March before running out any more gas, in order to see the effect of the first application. We then gave a light application of gas, using the open pot method in the open country and the pressure method in the scrub. On the 31st March, 1913, a considerable percentage of moisture had been removed from the pear over an area of 500 to 600 acres of land, and traces of gas were found a mile away from the point of application. I also noticed that in places where we succeeded in getting out nearly pure arsenious chloride the rotting of the pear, right down to the ground, was more pronounced, which proved that it was only a matter of using sufficient arsenious chloride and to apply same in the right way, to rot and kill all the pear treated down into the ground. I also found that better results were obtained by throwing the gas into the air and letting it be carried by the wind, when it comes down evenly, giving the pear a more uniform application over a larger area.

It is now evident that using pure arsenious gas not only completely destroys the pear, but by doing so with this method we have eliminated the big cost of all other processes, viz., labour. One man can take his machine in the centre of a square mile of country and operate there from a central point for two weeks, then move on to another square mile, and so on each fortnight, in other words, one man can operate over four square miles of country every three or four months, making allowance for bad weather conditions.

I have spent a considerable time in conducting a series of experiments with other gases, but the results obtained were not a success. No other gas tried comes anywhere near doing what the Arsenious Chloride does. Not only does the latter do better work, but it has a distinct advantage of neither injuring the grass nor cattle.

Arsenious Trichloride, or Arsenious Chloride, is one of the most soluble forms of arsenic, and is very poisonous to species of vegetation such as the Prickly Pear. It is just heavy enough as a gas to carry well, and its selective action for pear makes it fit into the pear problem in a way that in many respects is truly remarkable. The reason that it settles only on the pear is that the pear is several degrees cooler than the atmosphere, while other vegetation is about the same temperature as the atmosphere. If the gas is run out early in the morning, while the dew is on the grass and trees, and they are consequently cool, it would kill both trees and grass, but by waiting until about 9 a.m., when everything is dry, it selects only the pear, which, as mentioned above, is cooler than the air.

Land Legislation and Agreement for same.

During October I approached the Government in reference to a grant of land, but this necessitated a special Act being passed. This Act—the "Prickly Pear Bill"—became

law on the 28th November, 1912, and we immediately put in an application for a concession of 100,000 acres of land at Dulacca. This land extends along both sides of the railway about 22 miles, and as it is in the North-west belt of the well-known Queensland Darling Downs, and the rainfall is approximately 28 inches, it will be seen that this land is of good quality. Moreover, it is well known that the growth of pear is more prolific on good land.

The agreement the Government were prepared to make with us was not suitable and we rejected it After further negotiations, extending till March, 1913, we succeeded in getting the matter completed on a satisfactory basis, the terms of which you are now conversant with. We then approached the Government for a further 100,000 acres, which we succeeded in getting an option over on somewhat similar terms and conditions, and which document you now hold.

Working Costs.

Particulars of the working costs in connection with the pear destroying has already been supplied to you in detail. These figures confirm my original estimate, showing that the pear can be completely eradicated at a cost of under 10s. per acre, including labour, providing, of course, we manufacture our own chemicals. By manufacturing our own chemicals it will be possible for us, at a cost of 10s. per acre, to give the pear twice as much gas as we have given the Dulacca experiment to date, and will also have the advantage of using pure arsenious chloride, which will increase its efficiency by a good 25 per cent. There can be no doubt as to the result; it will kill the toughest old man pear right down into the bulbs.

We have, as you are aware, had cattle feeding in the pear ever since we commenced operations, sometimes right in the gas as it has been running out. There have been no deaths, and the cattle are in excellent condition, as are also our neighburs' cattle feeding over the paddocks where the gas has spread.

Experiments already conducted by me have proved that we can get a good return from the potash results from the burnt pear, but I have not had time up to the present to conduct any extensive operations in this direction, so cannot give the exact figures of the benefits we would derive from each acre of burnt pear. There is every indication of making a profit on each acre cleared, from the recovery of potassium carbonate from the ash.

Areas of Prickly Pear Land.

The extensive nature of the pear areas to be dealt with have been already published in the "Queenslander" under date 20th September, 1912, showing an area affected throughout the State of over 15,806,429 acres. The figures supplied by the Queensland Government's Annual Report of the Department of Public Lands 1913, show a total of 3,987,973 acres held as Prickly Pear selections, and in addition to this there are possibly 4,000,000 acres held as freeholds, leases, etc., making a total of about 8,000,000 acres subject to clearing conditions; and even assuming that only half this quantity, that is, 4,000,000 acres, are subject to clearing conditions, and 10 per cent. is cleared each year, it will leave 400,000 acres to be treated annually, so that the field of operations in regard to the sale of chemicals for eradicating the pear will be very extensive. Applications for prickly pear selections were accepted during the year to the number of 544 — Totalling 628,614 acres.

Chemical Works.

As Arsenious Chloride is practically an unknown chemical, and not obtainable in any quantities, it will be necessary for us to erect our own chemical works, and this is a matter I have given very close attention to. I find there is no difficulty in the way of having these works established in a suitable position for conducting the business to the greatest advantage. All the necessary plant and chemicals needed are obtainable at satisfactory figures.

Generally.

The recent reports which have been placed before you from visitors to Dulacca have confirmed the success of our process. The report of the two directors of the Queensland State Agricultural Bank indicates the necessity for prompt action upon our part in supplying the settlers with chemicals in order that they (the settlers) may keep up their clearing conditions.

Any report I might make in reference to the success of the process would be a mere repetition, and is, therefore, unnecessary. Judging from newspaper comments, from visitors to Dulacca, including Parliamentary Parties, numerous visitors of small Prickly Pear selections, large station managers and owners, and the public generally, they are unanimously agreed that we have the solution of perhaps the largest problem in the Southern Hemisphere. They want and need this solution or invention, and, as one member of the Queensland Parliament put it while at Dulacca, they are going to have it.

In order that we can keep our agreement with the Government in reference to our grant of 200,000 acres of land, and it is imperative that we do so; at least 20,000 acres of land should be cleared the first year to place the full value upon the process and serve as an object lesson to Queensland and New South Wales.

Yours faithfully,

(Sgd.) O. C. ROBERTS.

Report by Dr. Charles J. Sabelberg, on the non-injurious effect of Arsenious Chloride Gas on the operator.

5th November, 1913.

The Directors,
AUSTRALIAN POTASH CO. PTY. LTD..
Melbourne.

Dear Sirs,

As requested by you I visited Dulacca on the 30th Septen ber, 1913, and personally examined Mr. Russell, the operator who has been constantly distributing Arsenious Chloride Gas since Mr. Robert's experimenting began.

Mr. Russell, who, beyond standing to windward when stirring the mixture in the furnace, has taken no special precautions against poisoning, proved on examination to be in perfect health with no trace of Arsenic in his system.

I am, therefore, satisfied that there is nothing to be feared by the public in using Arsenious Chloride Gas in the prescribed manner.

Yours faithfully,

(Sgd) CHARLES J. SABELBERG, M.B.B.S.

Some Opinions on Mr. Roberts's Invention

Extract from "The Prickly Pear Problem in Queensland" by A. Temple Clerk:—

" . . . . . It is indeed grand for Queensland, having residing in it that eminent and widely travelled scientific man, His Excellency Sir William MacGregor, who has always had such a heartwhole interest in agricultural land. . . . . Whilst in the district (Dulacca) His Excellency also went out to see and go all through the densely infested with Prickly Pear land (some 300 acres of freehold purchased by Mr. O. C. Roberts) and which Pear has been lately treated by Mr. Roberts with his gas process on a large scale. **His Excellency,** being very keenly interested, **expressed his opinion that undoubtedly Mr. Roberts was on the right track.** This remark, coming from such a scientific man like His Excellency must be greatly appreciated by landholders . . . . . ."

CACTUS ESTATES LIMITED

Extract from official report dated 15th October, 1913, by Messrs. P. McLean and N. J. Westerguard Nielson, Directors of Agricultural Bank, to the Managing Director, Agricultural Bank, Brisbane :—

" . . . . . On the following morning, through the kindness of Mr. Roberts, a sulky was procured and we drove out to the locality of his operations about 2 miles from Dulacca, we were passing through densely Pear-infested country, and had not gone far till we noticed the Pear drooping and decaying. This continued to intensify until we reached where operations had been carried out, and there the magnitude of the work presented itself. The country was more or less densely covered with Pear, the soil being of a rich, loamy nature. The Pear had grown to a height in many places of more than six feet of almost inpenetrable density. The country is heavily timbered, and through this a narrow track has been cut to enable the operator to diffuse a gas called, we believe, "Arsenious Chloride" over the Pear, be it noted that the decay mentioned as seen in going out, was from the overflow of gas, and we were assured that the operator, establishing his plant in the centre of a square mile of country, can, from that point, deal effectively with the whole of that area. As far as the eye could reach the Pear had collapsed and was in various stages of decay and rott ng. While this process is going on and the poison gradually circulating through the plant, it being now the growing season, a considerable number of fresh young shoots have grown out of the decaying plants but these are again withering as the effect of the poison sinks below their source, or affected by the gas released from the rotting plants. It was rare not to see young plants affected, either at the root source or by brown spots marking the commencement of decay caused by the gases released, as mentioned above, thus signing the death warrant of the whole plant . . . . . **With a view to assisting holders of Prickly Pear country we most respectfully suggest an Amendment to the Agricultural Bank Act by including in Sub-section (C), Section (16) the words:-"The purchase of gas-producing material for the destruction of Prickly Pear and other pests." . . . . The Person who has any knowledge whatever of the Prickly Pear Problem has only to go to Dulacca and visit the scene of operations to be convinced of the success of Mr. Roberts's work . . . ."**

Extracts from Newspapers

Brisbane Daily Mail, July 30, 1913

PRICKLY PEAR PROBLEM.

DESTRUCTION BY GAS EFFECTUAL.

Mr. A. T. Clerk Interviewed.

Mr. A. Temple Clerk, the author of the pamphlet, "The Prickly Pear Problem in Queensland," was interviewed yesterday by a reporter of "The Daily Mail."

He has just returned from Dulacca, where the gas process has been largely used by Mr. Roberts on prickly pear. He spent many days closely examining the pear, and wandering through the large area of pear which had been treated in a most crude manner with the poisonous gas. He was more positive than ever that his gas formula was none other than absolutely fatal to the whole of the pear. The gas did not take a rapid killing effect on the pear, but was rather the opposite, a slow process, but most assuredly a very deadly one.

"Then it is incorrect when stated, as it was in the Legislative Assembly, by a member, that the poison did not penetrate down into the bulb?" queried the reporter.

"Absolutely false, and, furthermore, there is no bulb to prickly pear. But there is just below the surface soil an enlargement, which is merely a swelling of the tap root, and is, correctly speaking, a storage organ for water and reserve material. The true bulb of a plant you dig up and store away, for a year or two if you like, before again planting, and it will always readily grow, but with the so-called bulb of prickly pear you cannot, as once taken out of the ground and cut off from the butt it will gradually die."

"How does the gas take effect on the pear?"

"Well, you see, prickly pear is an air plant, and one which is always drawing into its lungs moisture and air, hence the gas, being heavier than air, so settles down all over the pear, and in Nature's course is absorbed into its lungs. Once there, the arsenic begins to do its work of circulating fatally through the whole of the plant."

"Does the gas also kill the timber, young shrubs, and grass?"

"No; simply because they are all of a dry nature, absorbing life's moisture through the dampness of the ground, affecting their roots, whilst prickly pear absorbs its moisture through its exposed joints. As for its harmful effect on the grass and stock, all I can say is that a considerable number of cattle have been and still are feeding over the area that has been treated with gas, right from the first day of operation, and up to the present time, with no ill effects to them. Nor have I found, though carefully searched for, any dead birds or small animals that may have been in the pear during the time the gas was being discharged over the pear."

"Does the gas take better effect on the pear in dry, warm weather, or in damp, colder weather?"

"So far as I have noticed by carefully watching the effects of weather upon the operation, I certainly consider up to the present that the cooler months of the year are the best, such as April, May, June, July, and August, as during those months the sap is usually circulating downwards."

"Is Mr. Roberts still continuing operations at Dulacca?"

"Yes, he has a foreman at work with the engine all day distributing large volumes of gas over the pear. He also now has being constructed a very powerful machine that will deal with the standing timber and the clearing of the pear."

"Then, I suppose, after all these years of your enthusiasm over the destruction of prickly pear that you are now pleased in the discovery of the Roberts' gas process?"

"Yes, I am indeed greatly pleased, and the most gratifying and pleasing feature of it all to me is in being able to positively say to you that the Roberts' gas process is wholly fatal to prickly pear."

Sydney Morning Herald, August 18, 1913

PRICKLY PEAR.

GAS EXPERIMENTS.

Evidence is accumulating that an effective means of killing prickly pear has been discovered by a young Californian chemist, Mr. O. C. Roberts, who has been experimenting with a gas made from arsenious chloride, and who obtained an area of 100,000 acres from the Queensland

Government, on condition that the pear was killed. Mr. Roberts has already killed the pear on a square mile of ground, although the gas was distributed over a wider area, and has more or less affected the pear on 1000 acres altogether. Some of the pear has been burnt off; a general burning-off is to take place at once, and following this the land will be put under crop. The effect was produced with arsenious chloride that was not pure; with this, other gases that hampered operations were also produced. Mr. Roberts has now secured a purer product, and he expects much more convincing results. The gas is forced out over the pear and settles down upon it. The pear, being somewhat colder than the surrounding vegetation, condenses the gas, and it is absorbed into the plant. That the soil is not affected is proved by the fact that grass has grown up where the pear has been burnt off, and on this cattle have been grazing without ill-effects. Men experienced in the destruction of prickly pear have been profoundly impressed by the results, which appear to give a real prospect of solving the great problem.

Queenslander, September 27, 1913

PRICKLY PEAR PROBLEM—II.

(By H. N. L.)

CLEARING BY GAS.

VISIT TO MR. ROBERTS'S STATION.

Instead of following the various methods of eradicating pear in their historical order, it will perhaps be best to give an account of the latest, least understood, and most promising system yet put forward. That is the gas system of Mr. O. C. Roberts. He has entered into an agreement with the Queensland Government, providing that he must have 2000 acres of land cleared of prickly pear within six months from 1st June next, and another 8000 acres in 12 months more. Then each succeeding year he has to clear 10,000 acres of pear until 100,000 acres is absolutely clear, and when it has been kept so for a set term the land will be given him. The writer visited Dulacca, where the land is situated, rode, drove, or walked over portions of it, and discussed the whole proposition with Mr. Roberts. His explanations of his system are given in this article, also the writer's comments and observations.

It may be said right away that the whole of the advantages of the agreement appears to be with the Government; indeed, the State has shown no excessively generous spirit in the matter. The country to be dealt with is as badly infested with prickly pear as any large stretch to be found, and it is very unlikely that any ordinary selector would take it over with a bonus of £3 or £4 an acre, and an obligation to clear. Mr. Roberts is not, however, an ordinary selector, and his training has peculiarly fitted him to tackle a matter of this kind. The result of his system he regards with complacent and absolute assurance. It may be said that he is a lanky American, comes of a family of chemists, has been attached for years to the chemical side of some of the mammoth businesses in the United States, and has pronounced views on the advantages of large undertakings to secure commercial success.

On being asked how he came to take up the prickly pear destruction business, Mr. Roberts said the first he heard of it was from a petroleum expert, who had been to Queensland, and had seen a lot of pear country. He came to Australia to have a look at the problem, and at that time had a spraying idea in his mind. He knew a lot about pear in California, and thought the conditions would probably be the same. When he saw the extent of country in Australia that was covered with pear, he recognised at once that some wholesale system was necessary if the pest was to be effectively dealt with. Spraying was too costly, and a great deal of labour was required, which increased the cost, and those were factors which made clearing under the old system unprofitable. He had been working with gases a great deal in America, and began to experiment with various kinds on pear. He methodically prepared a list of gases and considered each one in turn. He tried several which promised good results, and finally adopted arsenious chloride, which was the most soluble, and fulfilled the requirements exactly. It was about the only one of the arsenic gases that was extremely soluble in water, and it was very much more poisonous on vegetation than the old arsenate of soda—probably 10 times more. It also did not diffuse in the atmosphere, every atom that went up had to come down again. Those were the three main points he was looking for—solubility, poisonous character, and a gas that would not diffuse. It should be understood that gases all condense on cold surfaces. Pear contains about 90 per cent. of water, and the leaf being shaped like a water bag, with a large evaporating surface, is two or three degrees colder than the surrounding atmosphere. The arsenious chloride gas being very finely divided, and having rather fine molecules, enters the stomata or breathing pores of the prickly pear. Having an affinity for moisture, the natural consequence is that the gas passes into the plant, and into the circulatory organs, being soluble. He had never seen any chemical so suitable for the purpose. Everything dovetailed in splendidly. He had spent over a year in experiments, and now had everything satisfactorily solved. Tests had been made under all kinds of conditions, and his system had proved itself absolutely satisfactory. The company which had been actually formed was being put on a working basis, plans had been prepared for the machinery for distributing gas, and arrangements were being made for the company to manufacture

arsenious chloride of pure quality in sufficient quantities. Everything essential in the system had been carefully protected by patents, and he expected in March next to be in a position to supply plants and chemicals.

THE OUTWARD AND VISIBLE SIGNS.

Mr. Roberts and the writer rode out to view the experimental work that had been done. Turning north from the railway line, we found thick pear on both sides of the road. At first it looked healthy and green. A little further some of the leaves seemed to have been splashed with a faded drab. Gradually the drabness increased until finally all the pear we could see ahead and on either side was looking drab, and much of it appeared to be suffering from decay in places. The drab colour was due to the arsenical chloride gas. This had proved very effective within a radius of half a mile of where it had been set forth, and indications of its effects were to be seen even so far as a mile away. Some of the leaves appeared to have a chemical crust on them, due to hydrogen chloride, which was at one stage used in conjunction with arsenious chloride, but had since been discarded for the reason that the crust referred to prevented the arsenic entering the plant readily, and there was no compensating recommendation. More effective work was accomplished without the hydrogen chloride, and the cost was also cheapened.

Coming to the actual scene of the experimental operations, it was found that the pear was in many places dead or dying. Many leaves had shrivelled and become brittle and dead, but more had turned to a rotten, jelly-like substance. Cutting the leaves, we found traces in the circulatory organs of the poison running from segment to segment, in the trunk, and right into the root of bulb. Where the pure gas had been used the killing of the pear was most effective, and it is estimated that on some 400 acres it has been destroyed, and on about 500 acres partially so. In places green shoots of pear were found growing among the dead or dying plants, and many of these were closely investigated. It was usually found that they were suffering from the gas, and showed the effects by brown pimply spots. Mr. Roberts expressed the opinion that they would mostly die, for as the older pear rotted the gas would be liberated, and as it could not diffuse it would circulate among the young leaves, and so destroy them. Even if it did not, the clearing of the mass of pear would be a great thing and a second dose would clear the lot. He had been counting on two doses of gas to effectively clear the land, and thought they would be given at a total expenditure of about 15s. an acre when the system was in proper working order next March.

The next day we drove some distance further along the road where the gas had not extended to see what the country set apart for Mr. Roberts was like. It is mostly a brown soil of good agricultural quality. It is covered with brigalow and belar scrub, dotted with box, sandalwood, hopbush, and myall. It will be nice country when cleared, for on spots between the pear clumps there was a fine growth of herbage and grasses.

NO INJURY TO GRASS OR STOCK.

Reverting to the gas system, Mr. Roberts remarked that one man should be able to clear 10 or 12 square miles of country easily in a year. He would not have to go into it all, but just get his plant in the middle of, say, a square mile of country, and send forth the gas. In the autumn, about March, April, and May, the pear plant appeared to be more succulent than at other seasons, and that, he thought, would be the best time to work, but he worked any time except in heavy rain, when the ground was wet, or on a cold, damp day. The reason was that under those conditions the grass and trees would to some extent condense the gas, and be affected by it. In dry, warm weather, it had no effect on the herbage or timber. That contention was clearly supported by the green grass, wild carrot, and other herbage among the dead and dying poisoned pear, for they looked as well as if no gas had ever been there. The same can be said of the trees, with the exception of a few young belars in one place, which appeared to have suffered on some of the branches. On inquiry it was found that gas had been put out close to these on a cold, wet day. Under ordinary conditions, however, the indications are that the arsenious chloride gas will destroy the pear without injuring other vegetation or stock. At first cattle were kept carefully away, and some of the surrounding farmers took precautions to keep their stock as far from the working operations as possible, but now no one seems to worry, and cattle had been moving about in the gas area and among the poisoned pear without showing the slightest ill-effects.

HOW THE GAS WORKS.

I will try and explain the gas system in another way, to make the position clear. The arsenious chloride used is a liquid resembling a very fine, clear oil. If it is put in a boiler and heated the liquid will be converted into vapour or gas, which is liberated in the air. Being heavier than air, the gas finds its level, as water would, and sinks down on to the pear. The leaves of the pear, being colder than the atmosphere or other surrounding vegetation, condense such of the gas as touches the leaves, and in sucking air through its breathing pores, the plant also sucks in the arsenic. That gets into the circulatory organs, and is carried both up and down. If sufficient is absorbed it will kill the pear from the fruit down to the root, or bulb. The process is slow, extending probably over months before the pear rots down completely. Young shoots may come out from the parent plant, but after growing a few inches they appear to absorb the poison. As the plant rots it keeps throwing off chlorine, in the shape of hydrogen chloride, and the theory is that it is that liberated poison which kills the young shoots after they have started.

The earlier experiments were with imperfect gas, and that is said to be the reason why some of the area operated on is not yet dead, though it shows plain indications of being very sick. With pure gas, Mr. Roberts considers it should take about three months to kill the pear. The first visible sign of the poison working was when the leaves began to turn brown. Then the poison got through the corky substance near to the outside of the leaf, and into the circulation veins. Every bit of poison that entered the plant was extremely soluble, and would work right through the plant. Then the leaves would begin to jelly, and that was

the end of it. The time of operating could be hastened by running a fire through the pear, as it made it easier for the poison to pass through the corky layer.

DEALING WITH SCATTERED PEAR.

On the site of the old Dulacca sheep yards is a growth of pear as dense probably as any to be found in Queensland. It is about 8ft. nigh, and a solid mass. For the purpose of demonstration Mr. Roberts, by means of a primus stove, and an iron pot, evaporated some gas near this. The effect was to be noticed on the plants near by the same day, and next day signs of arsenic were found on the leaves some distance away.

Near the same place is some scattered pear, and Mr. Roberts had operated on that three weeks previously, using three quarts of arsenious trichloride to the measured acre. The scattered clumps were all showing pronounced signs of the effects of poison. The leaves had whitened, and lost much of their moisture. In a few months they will probably be quite dead.

A BY-PRODUCT.

The essential feature of the gas system is its capacity to destroy prickly pear. Since Mr. Roberts has satisfied himself that his method will prove successful, he has been turning his efforts towards the utilisation of by-products. These experiments show that dead pear when burned produces a quantity of potash. Dense pear of, say, 500 tons to the acre, would give about one ton of 85 per cent. potassium carbonate, worth approximately £24 a ton in America. It would require to be collected, leached ,and refined, and the freights would have to be deducted. As soil on which pear grew was rich in potash, it would not be robbing the soil to take it away.

Speaking on the subject of utilising the land, Mr. Roberts remarked that he hoped to have 50,000 acres cleared and ready for the plough two years from 1st June next. He has had a plant designed to pull down the trees, and proposes to burn them at the same time as the dead pear. After collecting the potash the ground would be ready for the plough. What kind of a crop would be sown remained to be decided.

After a careful inspection one could only conclude that the system is very promising, and the results so far all support Mr. Roberts's contention that it will effectively eradicate the prickly pear.

When it is put into practical operation on a large scale, about March next, a great deal of interest will be centred on Dulacca, for the success of the system will mean a satisfactory solution of one of Queensland's most difficult problems.

Other phases of the prickly pear question will be dealt with next week.

Courier, September 30, 1913

PRICKLY PEAR.

WORK OF DESTRUCTION.

PARLIAMENTARY VISIT TO DULACCA.

The party of Parliamentarians organised by Mr. Godfrey Morgan, M.L.A., to visit Dulacca and see what is being done there in the way of experimenting with prickly pear destruction have returned greatly impressed and pleased with what they saw. The members of the party consisted of Messrs. Morgan, Bebbington, Hamilton, Hardacre, B. H. Corser, Payne, H. M. Stevens, O'Sullivan, and G. P. Barnes, MM.L.A. They left Brisbane on Friday, and on Saturday went out to the Government experimental station.

The party then went on to meet Mr. Roberts, and found that gentleman had much to show them that was of great interest. They regarded his method of pear destruction as being most valuable, solving the greatest land problem that at present confronts Queensland. They found that Mr. Roberts had marked out a patch of 50 acres of prickly pear infested land. In his early experiments he found that the wind carried the gas to a great distance, and that it settled down and killed pear a mile distant from the spot where he was experimenting. Therefore he adopted different methods. He liberted the gas on calm days, when it settled down on an area of 80 or 100 acres with effective results, the pear succumbing to the effects of the poison, and some of it will soon be ready for clearing up, though it is hardly dry enough for that purpose yet. It was found by Mr. Roberts that where the pear stumps were thick the plant in a desperate effort to live threw out fresh leaves, but the gas released from the stump attacked the new leaves and killed them. Continuing to discuss what the visitors had seen and learnt from Mr. Roberts, a member of the party said that Mr. Roberts intended to have a small machine equipped with chemicals so that a pressure of 15lb. per square inch would be exerted. Then the gas would be liberated in one big cloud, and settle down on the pear instead of drifting away. In this way it is expected that the pear will be very effectually treated. Mr. Roberts has made experiments in the destruction of some very dense pear, which it would probably cost between £30 and £40 per acre to destroy by ordinary methods, and which he estimates to clear at a cost of about 15s. per acre. For the treatment of pear less dense, and existing in bunches, about 10ft. or 20ft. apart, Mr. Roberts has made a small machine capable of being carried and operated on horseback. Mr. Godfrey Morgan estimates the cost of clearing this pear by ordinary methods would be about £2 10s. per acre, but Mr. Roberts estimates he could clear the pear at a cost of 8s. per acre—6s. for gas and 2s. for labour at 1s. per hour. "Mr. Roberts estimates,"

stated Mr. Bebbington, who was greatly impressed with all he saw, "that when he gets the machines he is making in full working order that any person, even an old-age pensioner, could kill the pear on 10,000 acres in 12 months; but not burn it. There is no doubt, in my opinion," continued Mr. Bebbington, "that Mr. Roberts's methods will also be very effective in killing undergrowth, with which our Northern people are very much troubled. The gas will not kill herbage or timber unless it is wet. We saw some thistle—a very tender species of vegetation—growing vigorously amongst pear yhich had been dead for a week. In one place Mr. Roberts liberated the gas on a wet day, with the result that the undergrowth in the vicinity was all killed." Mr. Bebbington expressed the opinion that Mr. Roberts had not been treated generously enough by the Government. He had put in 18 months in experimental work, which, with Dr. Jean White's experiments, would be of great value to Queensland, and he was receiving nothing for it from the Government. "From these experiments we know sufficient," said Mr. Bebbington, "to clear ordinary pear at one-tenth the present cost, and thick pear at one-twentieth the present cost. It is a matter which I intend to bring before the Farmers' Parliamentary Union with the object of securing better treatment for Mr. Roberts. It will probably be next March before Mr. Roberts will be ready to proceed with his work of clearing his 100,000 acres of land, and in the meantime it would be a good thing if the Government could engage his services and let him go about demonstrating with a small machine how the pear and also lantana and undergrowth could be destroyed. Dr. White has demonstrated that autumn is the best time for killing the pear. The shire councils, who are expending a great deal of money in this direction, should be put in possession of these machines that Mr. Roberts is making. It would be the greatest boon to them." Mr. Bebbington added that the result of the visit to Dulacca was to convince the members of the party, or those who were practical farmers, that the problem of prickly pear destruction had been effectually solved.

The following information is embodied in this Prospectus, in accordance with the Companies Act, 1910 (Victoria):

The contents of the Memorandum of Association of the Company, with the names, descriptions and addresses of the signatories, and the number of shares subscribed for by them respectively, are hereinafter set out.

There are no founder's, or management, or deferred shares.

The number of shares fixed by the Articles as the qualification of a Director elected or appointed at or after the first General Meeting of the Company is 1000 shares. No qualification is required for Directors prior to the dissolution of the first General Meeting.

The Articles provide that the Directors shall be paid out of the funds of the Company, by way of remuneration for their services, such sums as the Company in General Meeting may from time to time determine, and such remuneration shall be divided among them in such proportions and manner as the Directors may determine, and in default of such determination equally. The Articles also provide that any Director who may be employed by or on behalf of the Company in any capacity other than that of an ordinary Director shall be paid such additional remuneration as may be determined by the Directors, and that such additional remuneration may be by way of a payment in accordance with the service rendered, or of a salary or commission, or participation in profits, or by all or any of these modes. In accordance with these provisions the Directors have agreed that Mr. Roberts, the inventor of the process, shall be paid £1,500 per annum for his services as Managing Director.

The names, descriptions and addresses of the first Directors are:–

OTWAY ROTHWELL FALKINER, Boonoke, via Deniliquin, New South Wales, Pastoralist.

HENRY JOSEPH WHITING, 101 William Street, Melbourne, Solicitor.

JOHN HENRY TAIT, The Auditorium, Collins Street, Melbourne, Manager.

JOSEPH MARK DESCHAMPS, 360 Collins Street, Melbourne, Manager.

JOHN RICHARD RIPPIN, 375 Collins Street, Melbourne, Investor; and

OLIVER CROMWELL ROBERTS, Dulacca, Queensland, Manufacturing Chemist.

The minimum subscription on which the Directors may proceed to allotment is 50,000 shares.

The amount payable on application is 2/6 per share.

The amount payable on allotment is 2/6 per share.

The number and amount of shares which have been issued or agreed to be issued as fully or partly paid up, otherwise than in cash, are as follows:—

135,000 shares of £1 each, fully paid up, to be allotted and issued to the Vendor as part of the consideration for the transfer to the Com pany of the Assets of the Vendor as hereinbefore mentioned, and

15,000 shares of £1 each, fully paid up, to be allotted and issued to the Underwriters of the 67,500 shares now offered to the Public for subscription, as the consideration for Underwriting the said 67,500 Shares.

No debentures have been issued or agreed to be issued as fully or partly paid up otherwise than in cash.

This Company has, by Agreement made between the Australian Potash Co. Pty. Ltd. and Norman Picot, as trustee for and on behalf of this Company, dated 25th November, 1913, and adopted by this Company, provisionally agreed to acquire the Assets of the Australian Potash Co. Pty. Ltd., and the amount payable to the Vendor, the Australian Potash Co. Pty. Ltd., whose address is 60 Queen Street, Melbourne, is £135,000, all payable in shares, and in addition this Company undertakes by the said Agreement to pay, satisfy, discharge and fulfil all the debts, liabilities, contracts or engagements of the Vendor (otherwise than to its shareholders for capital subscribed), and to indemnify it against all proceedings, claims or demands in respect thereof.

The amount paid or payable as purchase money in cash, shares or debentures for the said Assets (subject to the said Liabilities) is £135,000, all payable in shares. No amount has been or is payable for goodwill.

The amount payable as Commission for subscribing or agreeing to subscribe, or procuring or agreeing to procure subscriptions for any shares in or debentures of the Company is as follows:—

£15,000 (payment of which can be made in fully paid up shares) for Underwriting the 67,500 shares now offered to the Public for subscription, and in addition Brokerage at the rate of 6d. per share will be paid to the Company's Brokers on shares allotted on applications received through them.

The estimated amount of the preliminary expenses is £1,000.

No amount has been paid or is intended to be paid to any promoter other than is herein mentioned.

The dates of and parties to every material contract are as follows:—

Letters Patent of the Commonwealth of Australia to Oliver Cromwell Roberts, No. 5433, dated 24th June, 1912.

Assignment—Oliver Cromwell Roberts of the first part, Edward Clarence Dyason of the second part, and the Australian Potash Company Proprietary Limited of the third part, dated 11th February, 1913.

Agreement between the Australian Potash Company Proprietary Limited and Norman Picot, as Trustee for and on behalf of this Company, dated 25th November, 1913, adopted by this Company on the 28th day of November, 1913.

Agreement between the Honorable James Tolmie, Secretary for Public Lands (Queensland), for and on behalf of the Crown, and Oliver Cromwell Roberts, dated 16th May, 1913.

Letter from Under-Secretary Department of Public Lands, Brisbane, to Messrs. Feez, Ruthning & Baynes, Solicitors, Brisbane, dated 19th June, 1913.

Agreement between this Company and Oliver Cromwell Roberts, dated 28th November, 1913.

Underwriting Agreements by letters, all dated 18th November, 1913, from Joseph Mark Deschamps, John Henry Tait, John Richard Rippin, Charles J. Sabelberg, Henry Joseph Whiting, William D. Nicholas and George C. Allan, Rupert T. H. Clarke, George C. Allan, Merson S. Cooper, Henry Joseph Whiting and Rupert T. H. Clarke, and John Henry Tait and Edward John Carroll, O. C. Roberts and J. M. Deschamps, respectively to Norman Picot, as trustee for and on behalf of this Company, and acceptances thereof by the said Norman Picot, all adopted by the Company on 28th day of November, 1913.

The several Agreements mentioned or referred to in this Prospectus may be inspected at the Office of Messrs. Whiting & Aitken, 101 William Street, Melbourne, at any time between 10 a.m. and 1 p.m., or between 2.30 p.m. and 4.30 p.m. on any week day (except Saturday) prior to the closing of the List of Applications for Shares.

Mr. Samuel James Warnock, of 375 Collins Street, Melbourne, is the Auditor of the Company.

The Directors are all interested in the promotion of the Company, and in the property proposed to be acquired by the Company, as holders of shares or interests in shares in the Vendor Company, the Australian Potash Company Proprietary Limited, and the said John Henry Tait, John Richard Rippin, Joseph Mark Deschamps, Henry Joseph Whiting, Otway Rothwell Falkiner and Oliver Cromwell Roberts, are also interested as underwriters of part of the shares now offered for public subscription. The extent of their interests are as follows:

John Henry Tait has a two-thirtieth interest in the Vendor Company.

John Richard Rippin and Otway Rothwell Falkiner have between them a one-thirtieth interest in the Vendor Company.

Joseph Mark Deschamps has a one-thirtieth interest in the Vendor Company.

Henry Joseph Whiting has a seven-sixtieth's interest in the Vendor Company.

Oliver Cromwell Roberts has a one-half interest in the Vendor Company.

The said John Henry Tait has underwritten 4,500 of the shares now offered for public subscription, and jointly with Edward John Carroll an additional 2,250 shares, the said John Richard Rippin and Joseph Mark Deschamps have each underwritten 2,250 of the shares now offered for public subscription, the said Otway Rothwell Falkiner being interested in the underwriting by the said John Richard Rippin to the extent of one-fourth part thereof, and the said Henry Joseph Whiting has underwritten 7,313 of the shares, and has also jointly with Sir Rupert T. H. Clarke underwritten 36,000 of the shares, and the said Otway Rothwell Falkiner is interested in the underwriting by the said Henry Joseph Whiting and Sir Rupert T. H. Clarke to the extent of one-third part thereof, and the said Joseph Mark Deschamps and Oliver Cromwell Roberts have jointly underwritten 2,500 shares.

A copy of the Company's Memorandum of Association is printed on the subsequent pages hereof and forms part of this prospectus.

Dated this 4th day of December, 1913.

OTWAY R. FALKINER.

JOHN H. TAIT.

J. R. RIPPIN.

J. M. DESCHAMPS.

H. J. WHITING,
by his agent authorised in writing,
J. M. DESCHAMPS.

O. C. ROBERTS,
by his agent authorised in writing,
J. M. DESCHAMPS.

} Directors.

Witness to all the above Signatures

P. R. COTES,
Solicitor, etc.,
101 William Street, Melbourne.

COMPANIES ACT 1910.

COMPANY LIMITED BY SHARES.

Memorandum of Association

OF

Cactus Estates Limited

1. The name of the Company is "CACTUS ESTATES LIMITED."

2. The objects for which the Company is established are:—

(*a*) To acquire take over and carry on as a going concern the undertaking and all or any of the assets and liabilities of the Australian Potash Company Proprietary Limited incorporated in Victoria under the provisions of the *Companies Act* 1910 and with a view thereto to adopt the Agreement referred to in Clause 6 of the Company's Articles of Association and to carry the same into effect with or without modification.

(*b*) To acquire from the Government or other authorities supreme local or otherwise of any of the States of Australia or elsewhere any concessions grants leases decrees rights powers and privileges whatsoever which may seem to the Company capable of being turned to account and to work develop carry out exercise and turn to account the same.

(*c*) To develop the resources of and turn to account any lands and any rights over or connected with any land belonging to or in which the Company is interested and in particular by eradicating noxious weeds and other pests and clearing draining fencing planting cultivating building improving farming irrigating and grazing.

(*d*) To cultivate all produce of the soil and to carry on the business of planters in all branches and to carry on and work the business of cultivators winners and buyers of every kind of vegetable mineral or other produce of the soil to prepare manufacture and render marketable any such produce and to sell dispose of and deal in any such produce either in its prepared manufactured or raw state and either by wholesale or retail.

(*e*) To work and carry on on the said lands the business of stock and station holders planters farmers and graziers and for that purpose to buy and sell or otherwise deal with or dispose of any stock and produce.

(*f*) To insure with any other Company or person against losses damages risks and liabilities of all kinds which may affect this Company.

(*g*) To purchase or otherwise acquire any interests in any patents brevets d'invention licences concessions and the like conferring an exclusive or non-exclusive or limited right to use or any secret or other information as to any invention product or process which may seem to the Company or its Directors capable of being profitably dealt with.

(*h*) To use exercise develop grant licences in respect of or otherwise turn to account any such patents brevets d'invention licences concessions and the like and information aforesaid.

(*i*) To apply for and obtain in any part of the world any such patents brevets d'invention licences concessions or the like in respect of any invention product or process belonging to the Company or in which it may have any interest.

(*j*) To carry on the manufacture and sale of anything to which such patents brevets d'invention licences concessions or the like or information aforesaid may relate.

(*k*) To acquire and undertake the whole or any part of the business and assets of any person firm or company carrying on or proposing to carry on any business similar (either in whole or in part) to any of those which the Company is authorised to carry on and to carry on such business when acquired.

(*l*) To purchase lease take on hire or otherwise acquire any real or personal property rights and privileges which the Company or its Directors may think suitable for its business and to sell lease and dispose of any property rights or privileges not required.

(*m*) To build construct enlarge maintain alter and improve premises in connection with the carrying on of any of the said businesses.

(*n*) To establish branches and agencies for the purpose of the Company.

(*o*) To adopt such means of making known the products of the Company as may be deemed expedient and in particular by advertising in the press or otherwise by circulars by purchase and exhibition of works of art or interest by publication of books and periodicals and by granting prizes rewards and donations.

(*p*) To borrow or raise or secure the payment of money in such manner as the Company shall think fit and in particular by the issue of debentures or debenture stock perpetual or otherwise charged upon all or any part of the Compny's property (both present and future) including the uncalled capital and to reduce or pay off any such securities.

(*q*) To invest and deal with the moneys of the Company not immediately required upon such securities and in such manner as may from time to time be determined and to lend money to such persons and on such terms as may seem expedient and in particular to customers and others having dealings with the Company and to guarantee the performance of contracts by any such persons.

(*r*) To draw make accept endorse discount execute and issue promissory notes bills of exchange bills of lading warrants debentures and other negotiable or transferrable instruments.

(*s*) To sell exchange lease mortgage dispose of turn to account or otherwise deal with all or any part of the property and rights of the Company.

(*t*) To pay all expenses incurred in connection with the formation of the Company.

(*u*) To promote any other Company for the purpose of acquiring all or any of the property and liabilities of the Company or of undertaking any business which the Company or its directors may deem likely to assist or benefit the Company and to subscribe or agree to subscribe whether absolutely or conditionally and to procure or agree to procure subscriptions whether absolute or conditional for, and otherwise to acquire, any shares or other interests in such Company.

(*v*) To sell or dispose of the undertakings of the Company or any part thereof for such consideration as the Company may think fit and in particular for shares debentures or securities of any other Company having objects altogether or in part similar to those of this Company.

CACTUS ESTATES LIMITED

(*w*) To amalgamate with any other Company having objects altogether or in part similar to those of this Company.

(*x*) To enter into any arrangements for sharing profits union of interests co-operation joint adventure reciprocal concessions or otherwise with any person or Company carrying on or engaged in or about to carry on or engage in any business or transaction capable of being conducted so as to directly or indirectly benefit this Company and to take or otherwise acquire shares and securities of any such Company and to sell hold re-issue with or without guarantee or otherwise deal with the same.

(*y*) To distribute any of the property of the Company in specie among the members.

(*z*) To do all such other things as in the opinion of the Company or its Directors are incidental or conducive to the attainment of any of the above objects.

3. It is hereby declared that the objects specified in each paragraph of the preceding clause shall except where otherwise expressed in such paragraph be in nowise limited by reference to any other paragraph.

4. The liability of the members is limited.

5. The share capital of the Company is £300,000 divided into 300,000 shares of £1 each with power to divide the shares in the capital for the time being into several classes and to attach thereto respectively any preferential deferred qualified or special rights privileges or conditions.

We the several persons whose names and addresses are subscribed are desirous of being formed into a Company in pursuance of this Memorandum of Association and we respectively agree to take the number of shares in the capital of the Company set opposite our respective names.

Names, Addresses, and Descriptions of Subscribers.	Number of Shares taken by each Subscriber.
JOHN RICHARD RIPPIN, 375 Collins Street, Melbourne—Investor	ONE
HENRY JOSEPH WHITING, 101 William Street, Melbourne—Solicitor	ONE
JOSEPH MARK DESCHAMPS, 360 Collins Street, Melbourne—Manager... ...	ONE
OLIVER CROMWELL ROBERTS, Dulacca, Queensland—Manufacturing Chemist	ONE
OTWAY ROTHWELL FALKINER, Boonoke, via Deniliquin, N.S.W—Pastoralist	ONE

Dated this Twenty-seventh day of November, 1913.

Witness to all the above Signatures,

P. R. COTES, Solicitor, etc.,
101 William Street, Melbourne

Form of Application for Shares

Cactus Estates Limited

Capital £300,000 in 300,000 Shares of £1 each

APPLICATION FOR SHARES

To the Directors of
CACTUS ESTATES LIMITED, 60 Queen Street, Melbourne.

Gentlemen,

I enclose herewith the sum of £ being the amount of the deposit of 2/6 (two shillings and sixpence) per Share on Shares in the Cactus Estates Limited. I hereby apply for that number of Shares on the terms of the Prospectus dated the Fourth day of December, 1913, and the Memorandum and Articles of Association of the said Company, and I request you to allot to me such number of Shares. And I hereby agree to accept the same or any smaller number that may be allotted to me, and to pay a further sum of 2/6 (two shillings and sixpence) per Share on allotment, as provided by the said Prospectus. And I hereby also agree to be bound by the said Memorandum and Articles of Association, and I hereby authorise you to register me as the holder of the Shares allotted to me in pursuance of this application.

(Name in full).....

(Address in full).....

Description.....

Date..... Signature.....

N.B.—This form is to be filled in and remitted entire to one of the Brokers whose names are mentioned on the Prospectus as the Brokers of the Company, together with the deposit payable on application.

Exchange must be added to all cheques not payable in Melbourne, Sydney, Brisbane, or Adelaide.

No application will be received unless made on a form as above, as obtained from the printed copy of the Prospectus.

Applications for Shares will not be recognised unless received by the Company's Brokers on or before Tuesday, 16th December, 1913, at 5 p.m.

Cactus Estates Limited

Capital: £300,000, in 300,000 Shares of £1 each

RECEIPT FOR DEPOSIT ON APPLICATION

RECEIVED this.....day of.....191 , of Mr.....

the sum of.....being a deposit of 2/6 (two shillings and sixpence) per share, payable on the application by him for.....Shares in CACTUS ESTATES LIMITED.

CACTUS ESTATES LIMITED,

Per.....

Secretary.

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CACTUS ESTATES LIMITED,

Per.....

Secretary.

This Prospectus has been Wholly Set up and Printed throughout by

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